

**IN THE CLAIMS**

The following is a complete listing of claims with a status identifier in parenthesis.

1-22 (Canceled)

23. (Currently Amended) A method for heating a sample, said method comprising ~~the steps of:~~

- ~~I.~~ providing a heating apparatus and inserting the sample in ~~the~~ an applicator;
- ~~II.~~ generating electromagnetic radiation at a first output power level; and
- ~~III.~~ rotating athe deflector for adjusting athe coupling factor between athe waveguide and athe resonant cavity.

24. (Currently Amended) ~~The~~A method according to claim 23, wherein the sample has a first temperature  $T_1$ , the method further comprising ~~the steps of:~~

- heating the sample to obtain a second temperature  $T_2$ , wherein  $T_2 > T_1$ ; and
- rotating the deflector ~~for adjusting to adjust~~ to adjust the coupling factor between the waveguide and the resonant cavity in response to athe variation in athe dielectric properties  $\epsilon_{\text{sample}}$  of the sample.

25. (Currently Amended) ~~The~~A method according to claim 23, ~~Wherein~~wherein rotating the deflector further comprises: ~~step III comprises the steps of:~~

- ~~IV.~~ performing at least once the following, ~~the following steps one or more times:~~
  - positioning the deflector in a first position and measuring a first power of electromagnetic radiation reflected from athe waveguide applicator, the reflected radiation corresponding to said first position of the deflector,
  - rotating the deflector to a second position that is different from the first position and measuring a second power of electromagnetic radiation reflected from the waveguide

applicator, the reflected radiation corresponding to said second position of the deflector,  
and

~~V.~~ determining a preferred position of the deflector based on the amount of power reflected from the waveguide applicator in at least the first and second position.

26. (Currently Amended) ~~A-~~The method according to claim 25, further comprising ~~the steps of:~~

~~VI.~~ providing a first storing means;

~~VII.~~ storing information relating to the first position in the storing means and storing ~~the~~ a measured first power in relation thereto; and

~~VIII.~~ storing information relating to the second position in the storing means and storing ~~the~~ a measured second power in relation thereto.

27. (Currently Amended) ~~A-~~The method according to claim 26, wherein ~~step V~~ determining the preferred position of the deflector further comprises processing the stored first and second measured powers for determining the preferred position of the deflector corresponding to a local or an absolute minimum in the measured power or to a predetermined ratio of the measured power to the first output power level.

28. (Currently Amended) ~~A-~~The method according to claim 25, further comprising ~~the steps of~~ positioning the deflector in a the preferred position.

29. (Currently Amended) ~~A-~~The method according to claim 25, further comprising ~~the steps of~~ positioning the deflector in ~~the~~ a preferred position and generating electromagnetic radiation at a second output power level which is larger than the first output power level.

30. (Currently Amended) ~~A-~~The method according to claim 26, further comprising ~~the steps of~~ determining a ~~measure of the~~ relative permittivity measurement of the sample by comparing the stored measured powers with corresponding stored measured powers from a different sample.

31. (Currently Amended) ~~A~~The method according to claim 26, further comprising ~~the steps of determining an indication of the~~a chemical composition of the sample by comparing the stored measured powers with corresponding stored measured powers from a sample of known chemical composition.

32. (Currently Amended) ~~A~~The method according to claim 31, wherein the sample comprises at least one reactant for performing a chemical reaction~~;~~,~~the method further comprising the steps of: performing a chemical reaction with the at least one reactant determining a degree of reaction for the chemical reaction using the indication of the chemical composition of the sample.~~

33. (New) The method according to claim 31, further comprising:  
performing a chemical reaction with the at least one reactant; and  
determining a degree of reaction for the chemical reaction using an indication of  
chemical composition of the sample.